



# FAA Northwest Mountain Region Runway Safety Program

Troutdale RIAT  
March 14, 2001

**Jim Greene**  
**Regional Manager**



## **MIT Models Show Three Fatal U.S. Jet Aircraft Runway Collisions between 2003-2022**

Model shows one airline jet colliding with another - causing 700-800 deaths and injuries to more than 200 occupants.

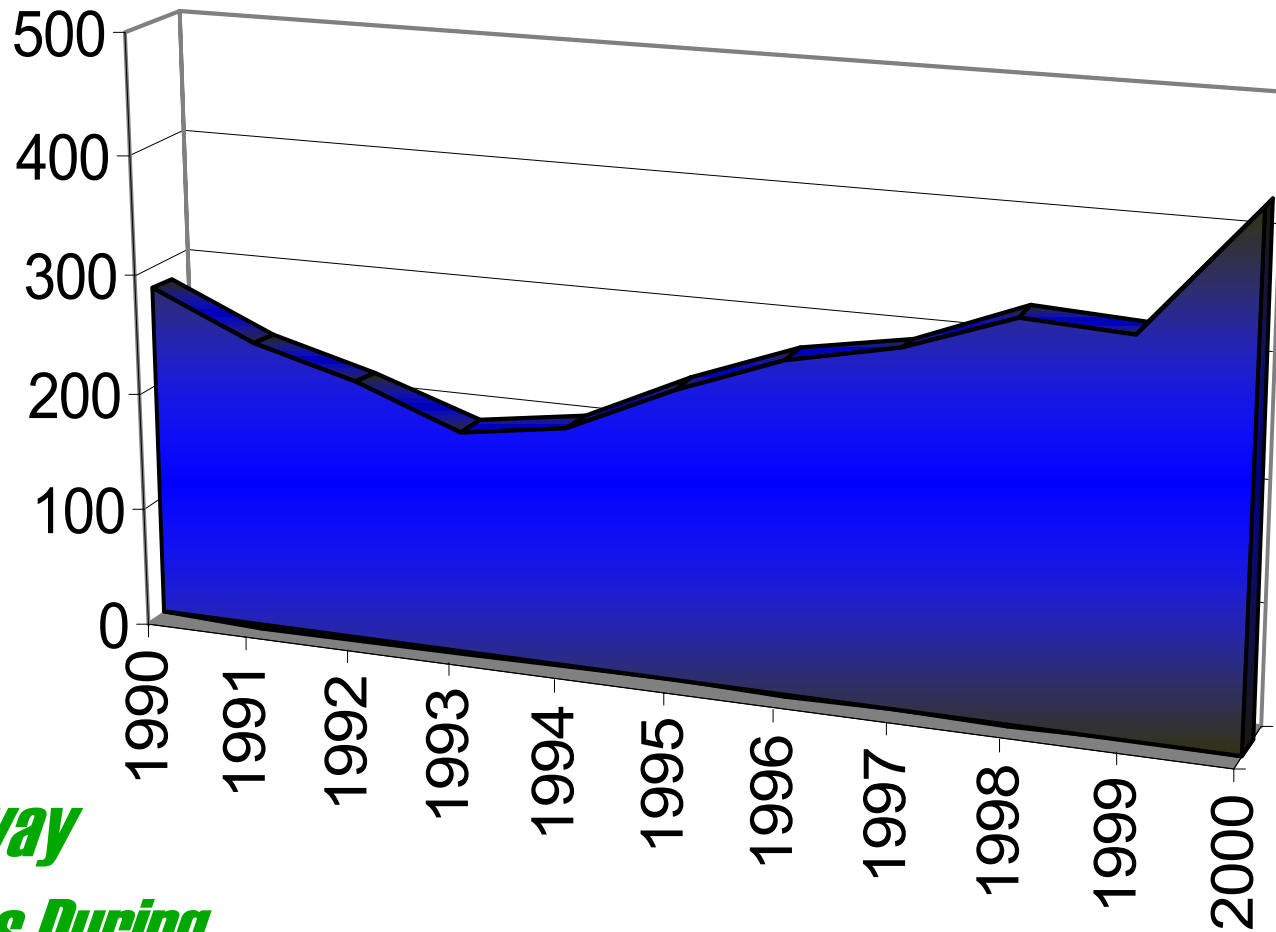
**“Runway collisions could cause more U.S. domestic jet deaths over the next two decades than all other causes combined.”**

Dr. Arnold Barnett, Ph.D.  
Massachusetts Institute of Technology (MIT)

**“For the last decade, reducing runway incursions has been on the National Transportation Safety Board’s (NTSB) “Most Wanted” list of transportation safety improvements.”**

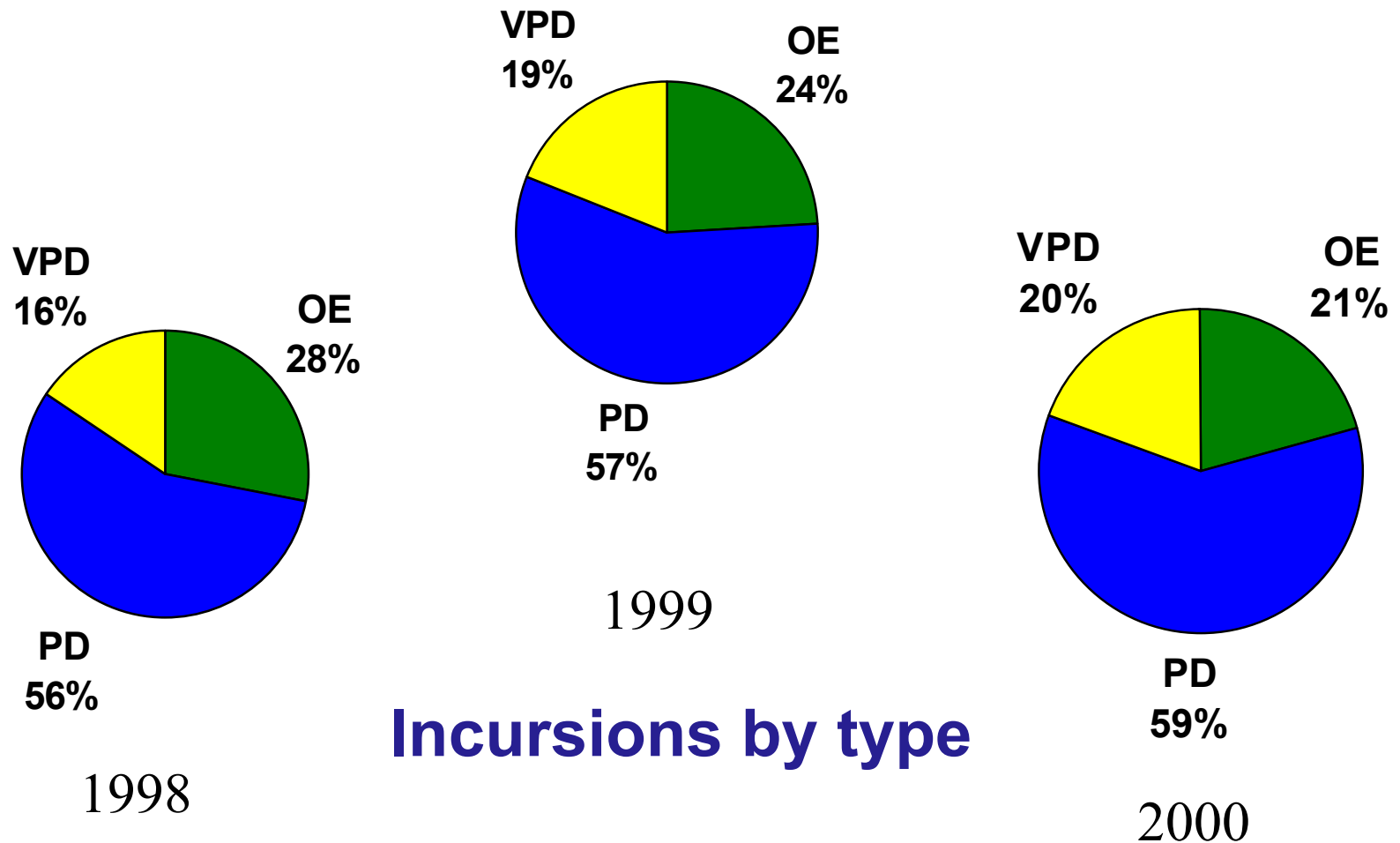
Chairman, National Transportation Safety Board

# Trends



***429 Runway  
Incursions During  
CY 2000***

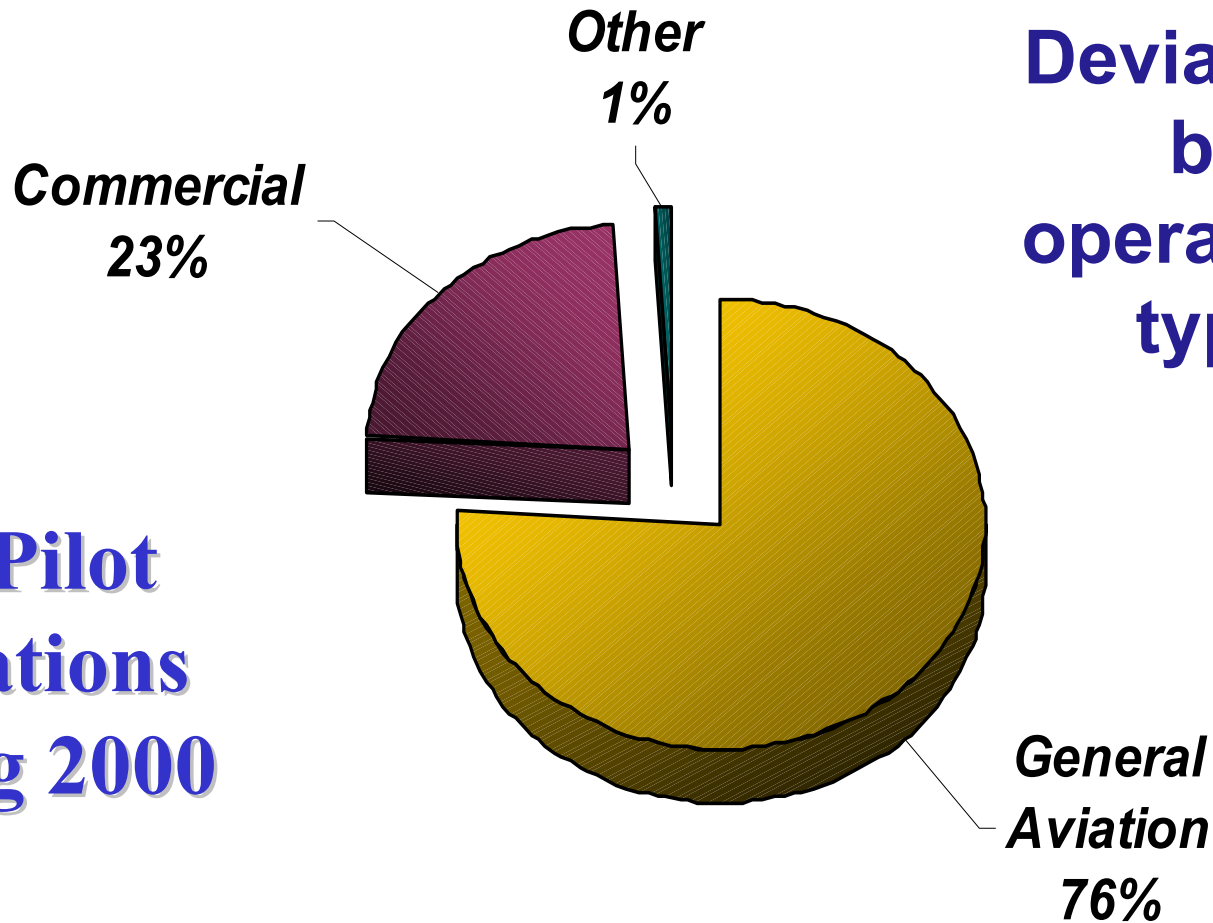
# Trends



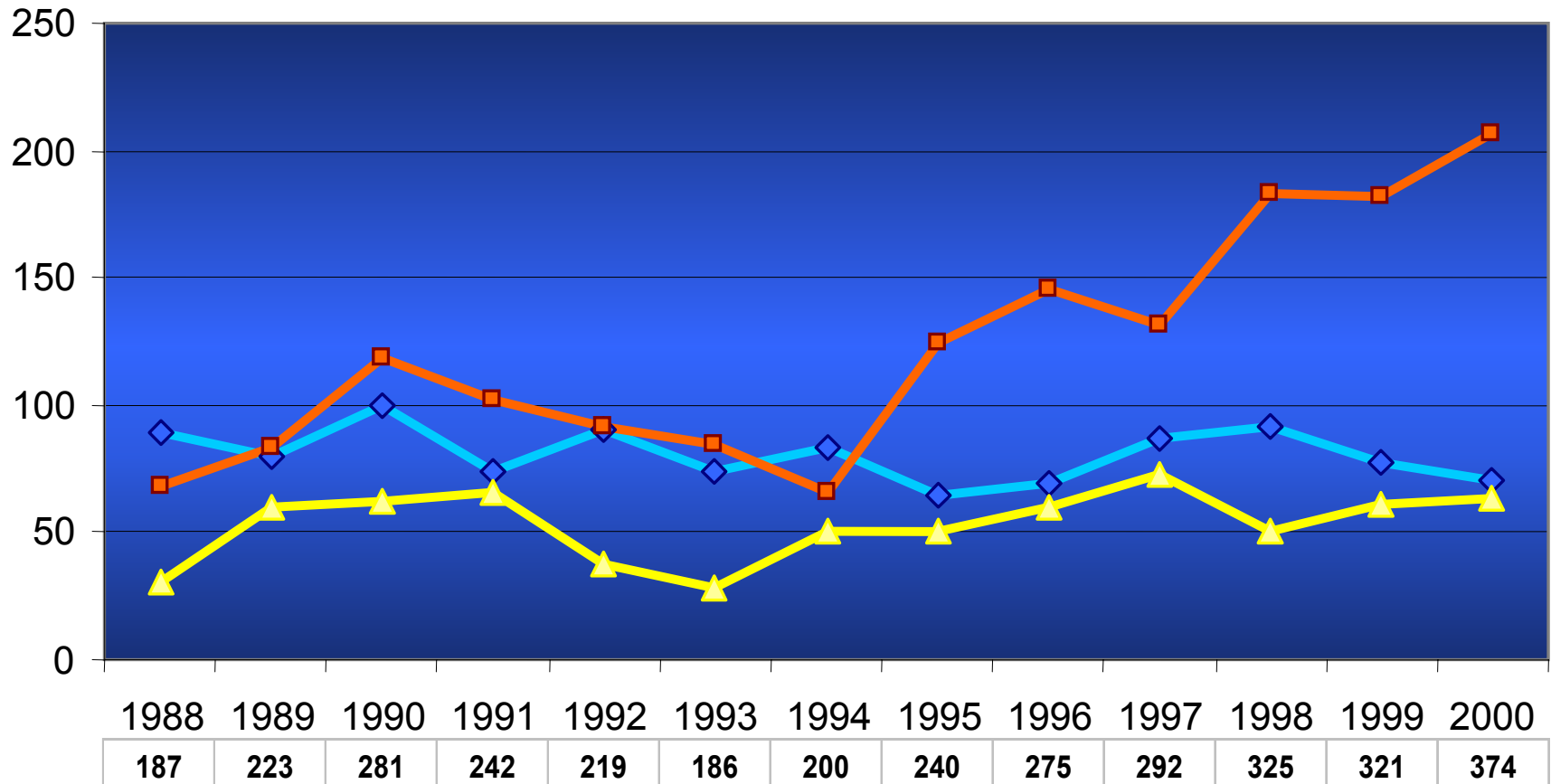
# Trends

## Pilot Deviations by operations type

**256 Pilot Deviations during 2000**



# Data and Trends



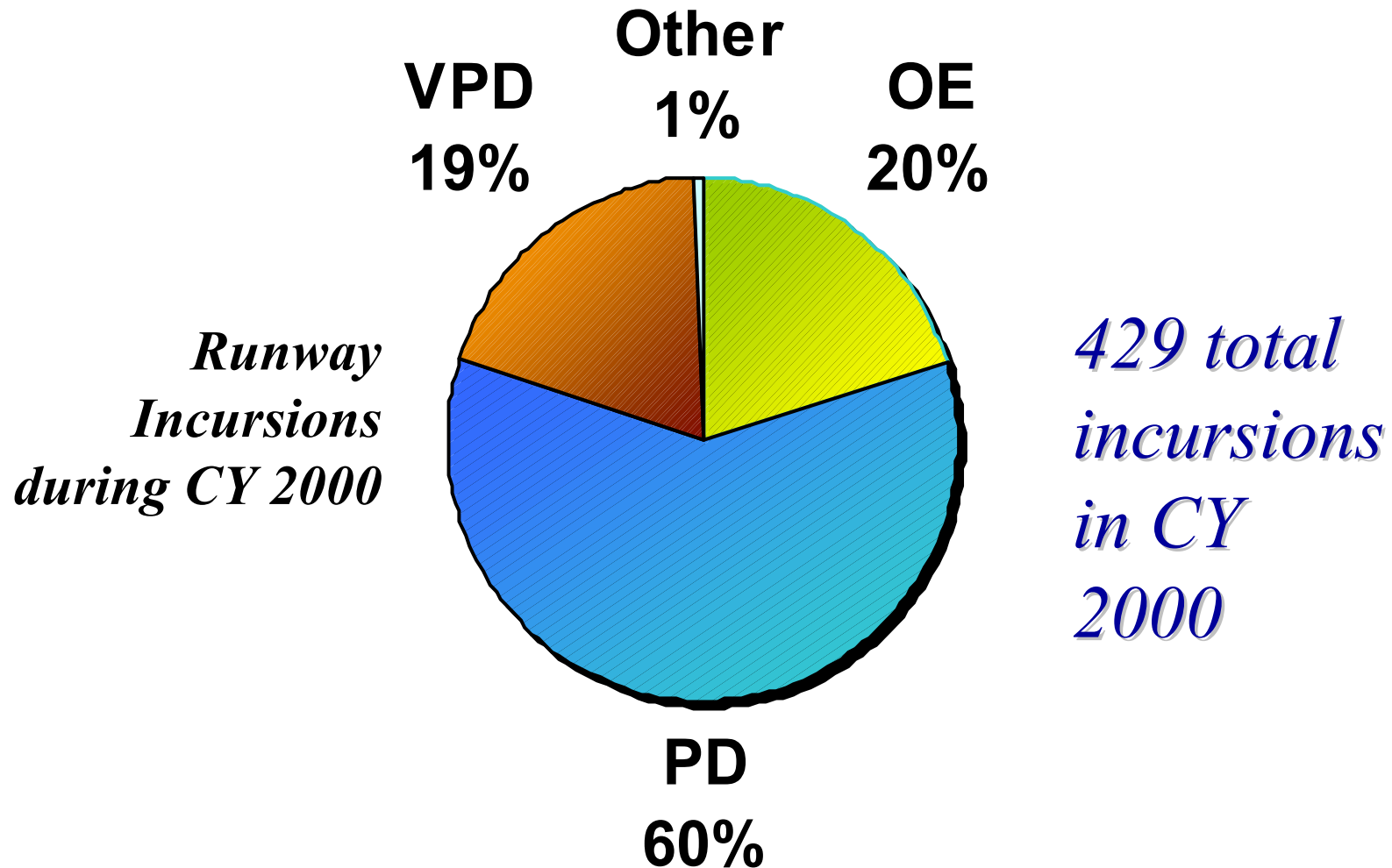
## Runway Incursions by Incursion Types

■ Operational Errors ■ Pilot Deviations ■ Vehicle/Pedestrian Deviations

*Note: CY 2000 data is preliminary and subject to change. Data valid as of November 143, 2000*

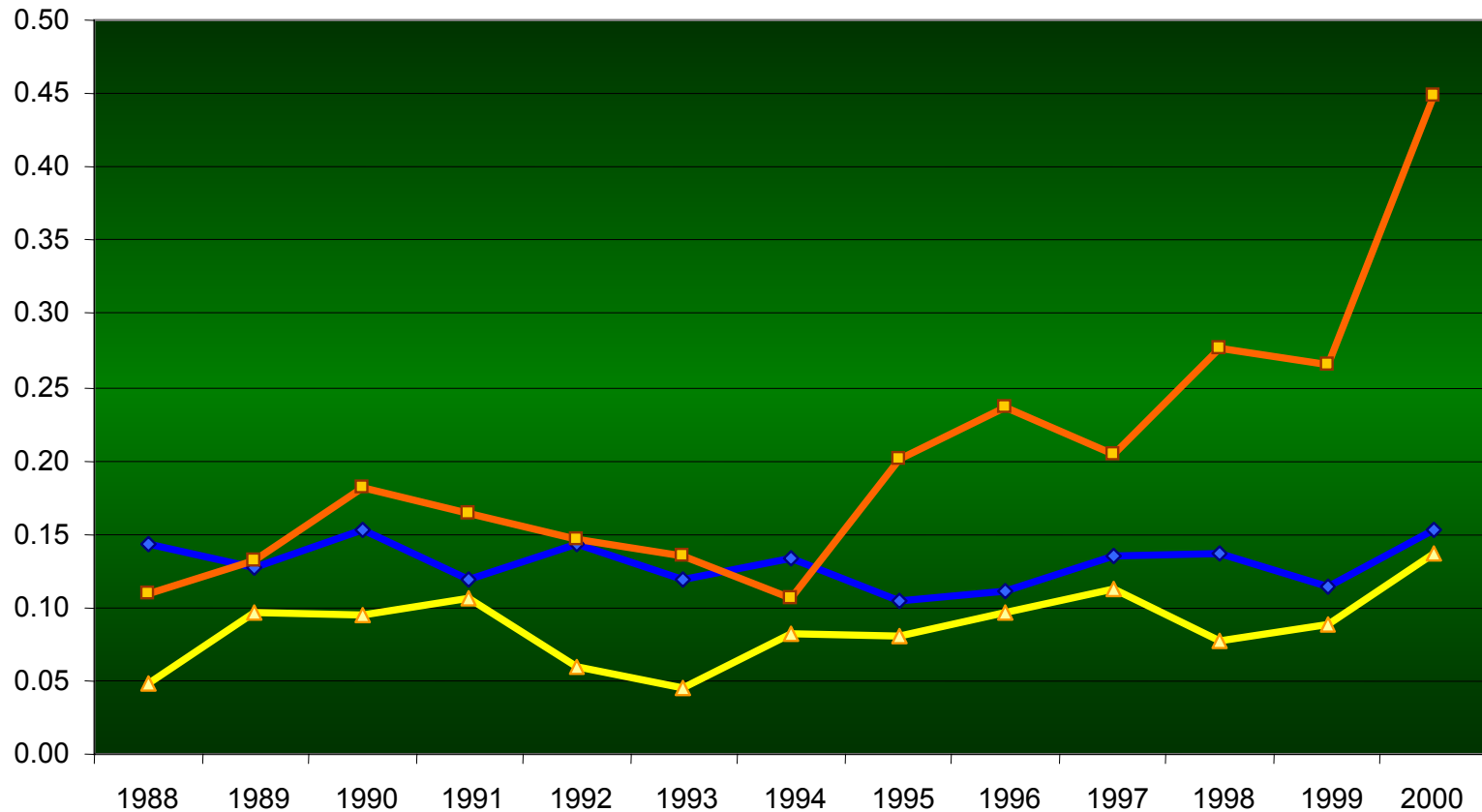


# Data and Trends



*Note: CY 2000 data is preliminary and subject to change. Data valid as of March 8, 2001*

# Data and Trends



## Runway Incursion Types per 100,000 Operations

■ Operational Errors ■ Pilot Deviations ■ Vehicle/Pedestrian Deviations

*Note: CY 2000 data is preliminary and subject to change. Data valid as of March 8, 2001*

# Collision Risk Categories

## **EXTREMELY HIGH**

A collision is narrowly avoided through last minute action or by chance

## **HIGH**

Corrective action was necessary – taken by ATC or flight crew and near collision was avoided

## **MEDIUM**

Serious error but without close conflict

## **LOW**

All others

- Air Carrier/  
Air Carrier
- Air Carrier/ GA
- GA/ GA
- Air Carrier/  
Vehicle or  
pedestrian
- GA/ Vehicle or  
pedestrian

# Incident Severity

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Based on  
potential  
loss of life



# Current Activities


 Develop and publish an Advisory Circular that establishes national standard operating procedures for airport surface operations.

- Being reviewed by AGC
- Target completion 12/31/00
- Awareness Strategy to begin after AC is published as document


 Evaluate the overall effectiveness of current phraseology in pilot-controller communications.

- Target completion 12/31/00
- MOU with NATCA signed
- Workgroup participation list being developed

# Current Activities (Cont)

 Conduct air traffic teamwork enhancement training at facilities with highest number of runway incursions caused by operation errors.

- Target completion 03/01/01
- MOU signed with NATCA


 Require all pilot checks, certifications and bi-annual flight reviews to incorporate evaluations of ground operations performance and test for knowledge of airport signs, lighting and marking.

- Flight Standards Service Information Bulletin issued 10/00
- Target completion 04/01/01

# Current Activities (Cont)

 Enhance operational tower controller training

- Target completion 12/31/00
- Workgroup participation list being developed

 Enhance controller memory abilities. Develop training course for air traffic controllers on the limitations of human memory and potential techniques to optimize memory capacity.

- Target completion 01/01
- Workgroup participation list being developed

# Current Activities (Cont)



Establish an education, training, and awareness resource library

- Collaboratively developed with government, industry, academia, and military
- Web site virtual library of materials near completion
- Distribution of government/industry/academia/military materials to begin no later than 12/31/00
- Target completion 6/30/01
- Contacts established with user groups training committees
- Metrics for success and process for sustainment to be established



# Current Activities (Cont)



Develop and promote throughout the international aviation community a runway incursion education and awareness program for foreign air carriers.

- Strategic plan completed
- Meeting with ICAO and IATA 10/20/00
- Target completion 04/01/01
- The ANC will determine if the Runway Safety Program will be included in the Global Aviation Safety Plan

# Current Activities (Cont)



Change runway hold line marking standards to double the current size of a runway hold line containing glass beads and outlined in black.

- Draft of AC 150/5340-1H published 9/28
- Comments due 11/1/00
- Pavement marking test at Tech Center continuing
- Target completion of change to AC 150/5340-1H on 12/01/00

# Current Activities (Cont)

## AMASS

- IOT&E completed at SFO on 9/28
- IOT&E completed at DTW on 10/26
- Full implementation at 32 remaining sites July 2001

## ASDE-X

- Notice to Proceed issued to Sensis Corp. 10/11

# Current Activities (Cont)

## Broad Agency Announcement

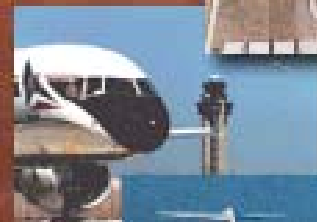
- Soliciting new and emerging technologies to improve runway safety
- Issued 09/19
- Initial closing date 10/17
  - Open for one year
  - 94 proposals received
  - Initial contract award beginning February 2001
- Safe Flight 21
  - Testing/demonstration fo ADS-B Technology at SDF complete 10/30



# Runway Safety Program

[www.faa.gov/runwaysafety](http://www.faa.gov/runwaysafety)

**Home**  
**Current Events**  
**The Cockpit**  
**The Tower**  
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**Technologies**  
**Human Element**  
**Newsroom**  
**Statistics & Data**  
**About Us**  
**Partners**  
**Links**  
**Contact Us**





- ▶ Home
- ▶ Current Events
- ▶ The Cockpit
- ▶ The Tower
- ▶ **On the Ground**
- ▶ Technologies
- ▶ Human Element
- ▶ Newsroom
- ▶ Statistics & Data
- ▶ About Us
- ▶ Partners
- ▶ Links
- ▶ Contact Us

# Runway Safety Program

*on the ground*

## Create your own Airport Runway Safety Website, *FREE!*

In an effort to promote safer surface operations, the Runway Safety Program now offers all airports, regardless of size or use, the ability to create their own websites. Airports can now inform the flying public about airport hot spots, local procedures, operations, runways specifications, communications, and much more. Airports will even have the option of posting pictures and diagrams. ▶ [create website](#)



## Airport Signs, Markings & Lighting

Knowing airport signs, markings & lighting is the cornerstone to safe surface operations. Take a few minutes and review the current standards. ▶ [view](#)





- ## Airport Signs, Markings & Lighting

This informative booklet highlights such topics as airport basics, operations at towered/nontowered airports, phraseology and emergency procedures. You can even take a test to evaluate your knowledge. [view](#)



Select an ADO and find current information on such topics as safety issues, events, publications, forms, various programs, environmental concerns, how to contact local offices and much more. [visit](#)







- ▶ Home
- ▶ Current Events
- ▶ **The Cockpit**
- ▶ The Tower
- ▶ On the Ground
- ▶ Technologies
- ▶ Human Element
- ▶ Newsroom
- ▶ Statistics & Data
- ▶ About Us
- ▶ Partners
- ▶ Links
- ▶ Contact Us

# Runway Safety Program

*the cockpit*

## Airport Taxi Diagrams

To reduce runway incursions, the FAA has teamed up with the AOPA Air Safety Foundation to make taxi diagrams available for more than 330 of the busiest U.S. airports.

***The best part...it's free!*** [view](#)

**Airport  
Taxi  
Diagrams**

Great  
Idea!

## Operations at Towered Airports

This graphic-intensive Safety Advisory discusses the procedures for operating at towered airports. Learn about airport lighting, signs, markings, communications, procedures, charts, and much more. [view](#)







## Airport Signs, Markings & Lighting

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# Blueprint

-  Communicates FAA Vision for Runway Safety
-  Identifies Initiatives Currently Underway
-  Provides **Potential Candidate** Initiatives
  - ↓ Condensed from regional workshops, Human Factors seminar, NTSB, and summit recommendations
-  Provides for semi-annual reviews and annual updates

# National Blueprint

for



# Runway Safety

October 2000



[www.faa.gov/runwaysafety](http://www.faa.gov/runwaysafety)

# Blueprint (cont)

## Themes of National Blueprint for Runway Safety








- ↓ Shared commitment
  - With FAA Program Office as focal point
  - Together, the Community Leadership with the Program Office will drive the analytical processes and decision making
- ↓ Human error is underlying cause
- ↓ Anticipated traffic growth
- ↓ Ensurance that aviation continues as safest form of travel
  - Seven major thrusts in solving runway safety challenge

# Blueprint (cont)

## Seven Major Thrusts in Solution to Make Runways Safer:

- ↓ Training
- ↓ Technology
- ↓ Communications
- ↓ Procedures
- ↓ Signs/Markings/Lighting
- ↓ Data/Analysis/ Metrics
- ↓ Local Solutions

# Future Activities

-  01/01 - Expansion and improvement of RIAT process
-  02/01 - Execution of BAA contracts
-  03/01 - Second round of regional workshops
-  04/01 - Second human factors symposium
-  05/01 - Semi-annual review of RSP management effectiveness
-  06/01 - First international symposium on runway safety
-  10/01 - Publish and distribute FY02 Runway Safety Program Blueprint



# Local Problems require local Solutions

 Airport Traffic Control Tower

 Port of Portland

# Accident Prevention Program

## Aviation Safety-Education Meeting

### TROUTDALE AIRPORT

PORT OF PORTLAND MEETING ROOM

JUST EAST OF THE CONTROL TOWER

WEDNESDAY, MARCH, 14 2001

7:00-9:00 pm

## RUNWAY INCURSION AWARENESS

THE REGIONAL **RUNWAY INCURSION ACTION TEAM** FROM SEATTLE, WASHINGTON AND THE PORTLAND **FSDO** WILL HOST A RUNWAY SAFETY MEETING . A NEW VIDEO ON RUNWAY MARKINGS WILL BE SHOWN AND THERE WILL BE AN OPEN FORUM TO DISCUSS SAFETY RECOMMENDATIONS AND YOUR IDEAS

**NO ADMISSION FEE**

WINGS PROGRAM: A SPECIAL OPPORTUNITY FOR ALL PILOTS TO LEARN AND MEET BFR REQUIREMENTS

FEDERAL AVIATION ADMINISTRATION  
KEITH CRIMIN  
SAFETY PROGRAM MANAGER  
1-800-847-3806-ext5512

TROUTDALE  
AIR TRAFFIC  
CONTROL TOWER  
MARK GREENMAN  
503-665-0108

